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AGATCTACACAAGGCAAATTGAAAAAATAGATAAAATTTCGCAGGTATTAAAGCCGACTTAAAACAAATGAGTGAAGAA
TCTAGATGTGTTCCGGTTAACTTTCACTTTTATCTATTAAAGCGTCCATAATTTCGGCTGAATTGGTTACTCACTTCTT 80

GAAAAGAAAAATAAATACATATTGTAGTTAGTAAAAGAGAAAATAAAAGAACCTCGGCTTAACAGTCGA
CTTTCTTTTATGTATAAAACTCAATCATTTCCTCTTTTATTTCGGAGGCCGAATTGTCAAGCT 160

AAAACCAGAAATAATAAAAGAGAGACTGTGATTTTAATGGAAATCGTGAGGAAAAGAAAAATTAAATTTCATTAA
TTTGGTCTTTATTATTTCTCTGACACTAAAAATTACCTTTAGCACTCCCTTTAAATAAGTAAAAA 240

CGAGGGATTAATTGTTGTAAGTTGATGAAAAAATCTAGATAAAAATGCAGATCAAAATGTTGAAATTGACATTATT
GCTCCCTAATTAAACACATTCAACTACTTTTAGATCTATTTCAGTTTACACAACCTAAACTGTAAATAA 320

GAAATACGTAGTATATCAATAATGGGGGTTTGTCTATTTTTGGAAAGATTGAGTGAAGAAAATAGTT
CTTATGCACTATAGTTATTACCCCCAACAGATAAAAACGCTTCTAACTTTAGCTCACTTTCTTTATCAA 400

TGCGAGAGCAAAAACCCTTGCCGTTTCAAAATGACTTTGAAAAAATTCAATTGTGAGCGGTAGCGAAACTTTGAA
ACGCTCTCGTTTGGAACGGCAAAAAGTTTACTGAAACCTTTAAGTAACACTCGCCATCGCTTGAACCTT 480

FIG.- 1A-1



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ATTTTTACATTGAAATTGAAAATAAGGCCAAAGAAACTCAAATGAAAAAATTATTATAAAAAAGGAGATCG
TAAAAATGTAACCTTTAACCTTTTACCTTTTGAGTTTACCTTTTATAATAATTTCCTCTAGC

+

GATATGGATTAAAGCAGAAAAGTGCACATTGAATGAAAAAAGATTGGAAAAAATCTATGCTGAGAGTGAATTAA
CTATAACCTAAATTTCGTCTTTGACTTACCTTACTGTTTACGACTCTCACTTAATT

FIG.-1A-2



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GGACTATTAGAGTGTGGAACATCGAAATAAGTTGATAAAACAAGAAGTCGCTTTCGTTTGTATTGTGAGAGAACATTCA
CCTGATAATCTCACACCTTGAGCTTATCAAACATTTGTTCTACGGAAAGCAAAACATAAACACTCTCTTAAGT

Gly Leu Glu Cys Gly Thr Arg Asn Ser Phe Asp Lys Thr Arg Ser Ala Phe Arg Phe Cys Ile Cys Glu Arg Ile Gln

GCAACTGAGAAAAGAACAGCTGATAATGCCAAGAAGAGTAAAGATTTCGATACAATGAAAGCAAAACATAAAGAGGCTTTTG
CGTTGACTCTTTCTTCGACTATTACGTTCTCATTTTCTAAAGCTATGTTACTTTGTTTGTGTTTCTCCGAAAC
Gln Leu Arg Lys Glu Ala Asp Asn Ala Arg Arg Val Lys Asp Phe Asp Thr Met Lys Ala Lys Thr Lys Glu Ala Phe

AATTGAGTTTGTATAAGGATTTTGAGTGAATAAGAATTCAATGGAATGATAATTTCGATACAAACAAAAAGAC
TTAACTCAAAACAAAACATTCTAAAGTTTACCTTACACTTAAAGAGTGTGTGTTTCTCGATTATTAGATG

Glu Leu Ser Phe Val Phe Asp Lys Glu Leu Ser Glu Asn Arg Ile Gln Trp Asn Asp Ile Ser His Asn Lys Lys Asp

TCTGCAAGTAAAGAAAAACAAATGAAAGGGACACAATGGATGATAATTAAAGAGGCCTAAAAATAATAATCTAC
AGACGTTCAATTTCCTTTGTTACTTTCTGCCTGTGTTACCTACTATAAAATTCTCCGATTATTAGATG

Ser Ala Ser Lys Arg Lys Thr Met Lys Glu Ala Asp Thr Met Asp Asp Ile Phe Lys Arg Leu Lys Asn Asn Lys Ser Thr

ATATGATCGTTATGCTGGATTCTTCTATTGTTGATTACAGGTTGCGAGACCAGCAGAAGTTAAAGGGTATAGAGA
TATACTAGCAATACGACCTAAGGAAAGATAAAACAGCTAATGTCACCGTCTGGTCAAAATTCCCATATCTCT

Tyr Asp Arg Tyr Ala Gly Phe Leu Ser Ile Cys Ser Ile Thr Gly Cys Arg Pro Ala Glu Val Leu Lys Gly Ile Glu

FIG.-1B-1



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Tyr Asp Arg Tyr Ala Gly Phe Leu Ser Ile Cys Ser Ile Thr Gly Cys Arg Pro Ala Glu Val Leu Lys Gly Ile Glu

TAGTAAGAACAGATAATGAGGATGGTATCTTTAAATAACTTGGTCAAAGGTTGGAAATGACAGAGGGCAAAGCGAA
ATCATTCTTGTCTACTCTACCATAAGAAAATTATGAACCACGTTCAACCTTACTGTCTCCGGTTGGCTT 1280

Ile Val Arg Asn Arg Tyr Glu Asp Gly Ile Ser Phe Lys Ile Leu Gly Ala Lys Val Gly Asn Asp Arg Gly Gln Ser Glu

AGAACATTACATTTGATTATCAAATAATCATGATAATGAGCAAATGAAATTGAGGAAATTGAGGAAATTGAGGAAATTAAATAAAAGATAATAA
TCTTGTAATGTAACACTAAATAGTTTATAGTACTATTACTCGTTACTTAATAAAACAGCGTTAAATTTCATTATT 1360

Arg Thr Leu His Phe Asp Leu Ser Lys Tyr His Asp Asn Glu Gln Met Asn Tyr Ile Leu Ser Gln Leu Lys Asp Asn Lys

ATTTTCTACAAACAGATGGGAAGGCTCTACAAACAGCTTGAAGCCAATAACCTCTACATCCACATAGAACGTTTCACGT
TAAAAGATGTTGGCTACCCCTCGAGATGTTGCGAACTCCGTTATGGAGATGTAGGTTGTATCTTGCAAAAGTGACA 1440

Phe Phe Tyr Lys Pro Asp Gly Lys Leu Tyr Asn Ser Leu Arg Gln Tyr Leu Tyr Ile Gln His Arg Thr Phe Ser Leu

ATACACTTCGTCACAGGGTTGCCGAGTGAATCTCAAGGCATCCGGTCAAGTGAATTGACTTCACCATAGCGGCTNTTGGGTCACT
TATGTGAAGGCACTGTCACAGCTTCCGACTAGAGTCCCACAGCTACTGAAGTGGTATCGCCGANAAAACCCAGTG 1520

Tyr Thr Leu Arg His Arg Val Ala Ser Asp Leu Lys Ala Ser Gly Ala Asp Asp Phe Thr Ile Ala Ala ?m Leu Gly His

FIG.-1B-2



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AGAGTGAECTCAAAGCCAGGAGTTACTACGGCTATGCTCGTTCGNAAGGTGGTATCGCTGTAACGGTGGTCTGAGTCCTGCT
1600
TCTCACTGAGTTGGTCTCAATGATGCCGATAACGAGCAAGCAGCNTCCACCATAGCGACATTGACCAACTCACGA

Arg Val Thr Gln Ser Gln Glu Leu Arg Leu Cys Ser Phe Val ?? Arg Trp Tyr Arg Cys Asn Trp Cys

CTGATGTTGTGAAAGGCAAACAAAGACTCAGTTNGCTGTATCAAGGACTCCGAGCCAGATCT
1660
GACTACAACACTTCGTTTGTTCAGTCAANCGACATAGTTCTGAGGCTCGGTCTAGA

FIG._1C



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AGATCTCAACCGATTAAATTCGCACCTTCAGAAGTAAATAAGGGCCGGCACCGGCTCTTTGGTTTGTAG 80
TCTAGAGTGGTCAAATTAGCGTAGTTAGCTTACAGAGAAAAGCGATTAGGGTTTGACGAGGTTTCGAGCTATCCAGGGTTT
AATCACCTATATAGACAATCGATGTCCTCTGGATCAGAAAAGTCGTTCAAGATTATTGACATAAGACAGGAAGGTTTATAACAAGTACCA 160
TGGGTTTTGGCTTCAAGAAAAGTCGTTCAAGATTATTGACATAAGACAGGAAGGTTTATAACAAGTACCA 240
ACCCAAACCCAACCTAGTCAGCAAGTTCTAAACTGTATTCTGCTTCCAAATATTGTTCATGGTCTAT
CGACAAACCCAGCTTGCAGGCTGGCTTGAGGACTAAAGAAGTGGGACTTCTTGAGTCTTGTAAATCAAGTTGGTC 320
GCTGTTGGTCGAAACGTCCGACCGAAACTCCTGATTTCCTGAAAGAAACTCAGAACATTAGTTCAACCCAG
AGAAACTCGATTACGATTGTAAAGTAGAAATCTAACTCACATTTCGCAGAAAAGTCAAACTTACCTCTAGTTACAACCAA 400
TCTTGAGCTAATGCTAAACATTCACTCTTAGATTGAGTGTAAAGCGTCTTCAGTTGAATGGAGAATCAATGTTGAGTT
AAATTCCCTAGCCTTTCAGATCCTTAAGCATAACATATTGGTTAACCGATTGTCGGTGGAGCCAT 480
TTTAAAGGATCGAAAAGTCTAGGAATTGGCTAACACAGGCCACAAACCACCCCTCGGTA

FIG._1D-1



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TGATCCGAGTGGTCAATATGTGATTGCCAACACAGTGTATGTAGGTCTAAACGGGGAGTGCTACAAAAGACCATAACC
ACTAGGGCTACCACTAACAAAGCGGTTTGTCACATACATCCAGATTGCCCTCACGATGTTCTGGTATGG 560

CGAACAGGAGTGCCTAAGTGTGTTGGTTATCAACCAAGGTAAGCTATGAGAAAGCCAGCCATAAAATGGGGTTAGGTGAAG
GCTTTGCTCACGGATTCACAAACCAAATAGTTGGTCCATTGCGATACTCTGGTCAATTACCCCAATCCAACCTTC 640

CAAGTCTTCAATGGTGCACACAAGGGGTGTAGTAGGGGTGTCGTCAAACACTGAAAGGTTGATAGCTCTAAGCCTTGTGCT
GTTAGAAGTATACCAACGGCTGTGTTCCCCACATCATCCCACAGCTTCAAAACTATCGAGATTGAAACACCGA 720

TCTGTGGGTCAAGGCTCAAGTGTGCTGATCTGTGGTGTCTACCTTGATAAACCTTCACTTTCGAGTGAAATTCAAGGAGG
AGACACCCAGTTGGAGTTACGACTAGACACCAACAGCAGATGGACTATTGAAAGTGAAAGCTCACTTAAAGTCCTCC 800

CGAAACTATGGGTCAAGGCCAGCTTACAGCATTGGTGCCTTGGCAAGCTGAAGC
GCTTGTACCCAGTTGGGTGAAACGACCCCAAGGCCAGTGGTCAATTGTCGAATGTCGAACTTCGACTTCG 880

FIG._ 1D-2



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ACAAAAATCTAATCCAGGGTTGGGTTTATACAGAACAAACAAAAATTAAAACAAAAAGGAAAGCGA 960
TGTTCAGATTAGGTCCCCAACCAACCCAAAAATTATGGTCTCGTTTGTTTTAAAGCTCGCT

AAAATATTGGAAATTAAAGGCCATACTTGCTACCGCACCTTGGCATATTAAACCTGACTATCTTTATAAGT 1040
TTTTATAACCTTAACCTTCCGCTATGAACCGATGGCGTGAACCGGTATAAAATTGGACTGATAGAAATTCA

TATAGATATATCCTTAGATTATAAAGTAGTGTAAAACCGAGTAAACCTTATAATTAAATTCTGAATTATA 1120
ATTATCTATATAGCCAATCTAATATTTCATACAATTTCATTTGCTCATTTGTATTGAATATAAAAGACTTAAT

TTGACAGTGATTATTAAAGAGATAATCTATTAGCTTAAATATAACTAAAAAAAGGGTAAATTATGGAT 1200
AAACTGTCACTAATAATTATAATTCTCTATATAGATAATCGAATTATATTGATTTCCTCATTATAACCTA

TGTGTATTAAAAAGCCATTAGAAAATGAAATAGAACATTATAAAAGACGGTGAATCAAATCTTCTTACAATACTT 1280
ACACATAAAATTTCGTAATCTTTACTTTATCTTGTAAATTCTGCCACTATAGTTAGAAAGAATGTTATGAA

GCATTACTTTGATATAGATAAGCATTAAAGGATATTAGGTGAATGTGGCGATATTAAACTCAAATTATCCATTGATGAAA 1360
CGTAATGAAACTATCTATTTCGTAATTACCCACTTACACCCGCTATAATTGAGTTAAATAGGTAACCTACCTT

FIG.-1E-1



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GTTTGATCTTGTGAGCACATTGGCTGGCTTCAATAAAATAACAGAGACGAAATGAATATTATCA
CAAAACTAGAAGAACATAACTCGTGTAAAGCCGACCCGAAAGTTATTATGTCTGCTTACTTAAATAGT 1440

TCAGCTAAACTGAAATGTTTAAAAAATACTCGTTTATTCAATTGATCAATTGGAAAGAATTACGATGA
AGTCGATTTGACTTTACTAAATTTTATGAGCAAGAAATAAGCTAGTTAACCCCTCTTAATTAAATGCTACT 1520

GATGAGTACAATACATCAAGAAATGATTAAGGATTAGATAATTACACATAATGGAGAAATAACCATATGAATAAAAT
CTACTCATGTTATGTTAGTTCTTACTAAATTCTCTTAATCTTAAATGTTACCTCTTATTGGTATACCTTATTATTA 1600

AAGAGAATAATTGATTGAAATAACACAAAAGATAAAAGCTCAGCTCTTAAAGTCAAGCTTAAATCTGCATTGATCGATGTT
TTCTCTTATAACCTAAAGCTTATTGTTTCTATATTTCAGTCAGTCAAGAATTAGCTTAACTAGCTACAAA 1680

TAAAAGTAGATGAAAATTATTGATGAAGAGGGATTGCAACTAAAGATAATTGAAAATATCGTATGAAAATCCTATTGAT
ATTTTCATCTACTTTAAATAACTACTTCTCTTAAACGTTGATTCTATAACTTTTATAGCATACTTTTAGGATAACATA 1760

GATCCAGATGATGGCATAAGAAAATCACAAATTGGCACCGAAGAAATGCCATTGCTTTCGGCATTAAAAACAGCAAAA
CTAGGTCTACTACCGTATTCTTTAGTGTAAAGCGTCTTACGGGATAACGAAAGGGTAAATTTCGTTTT 1840

FIG.-1E-2



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GAGATCT
1847
CTCTAGA

FIG.-1F



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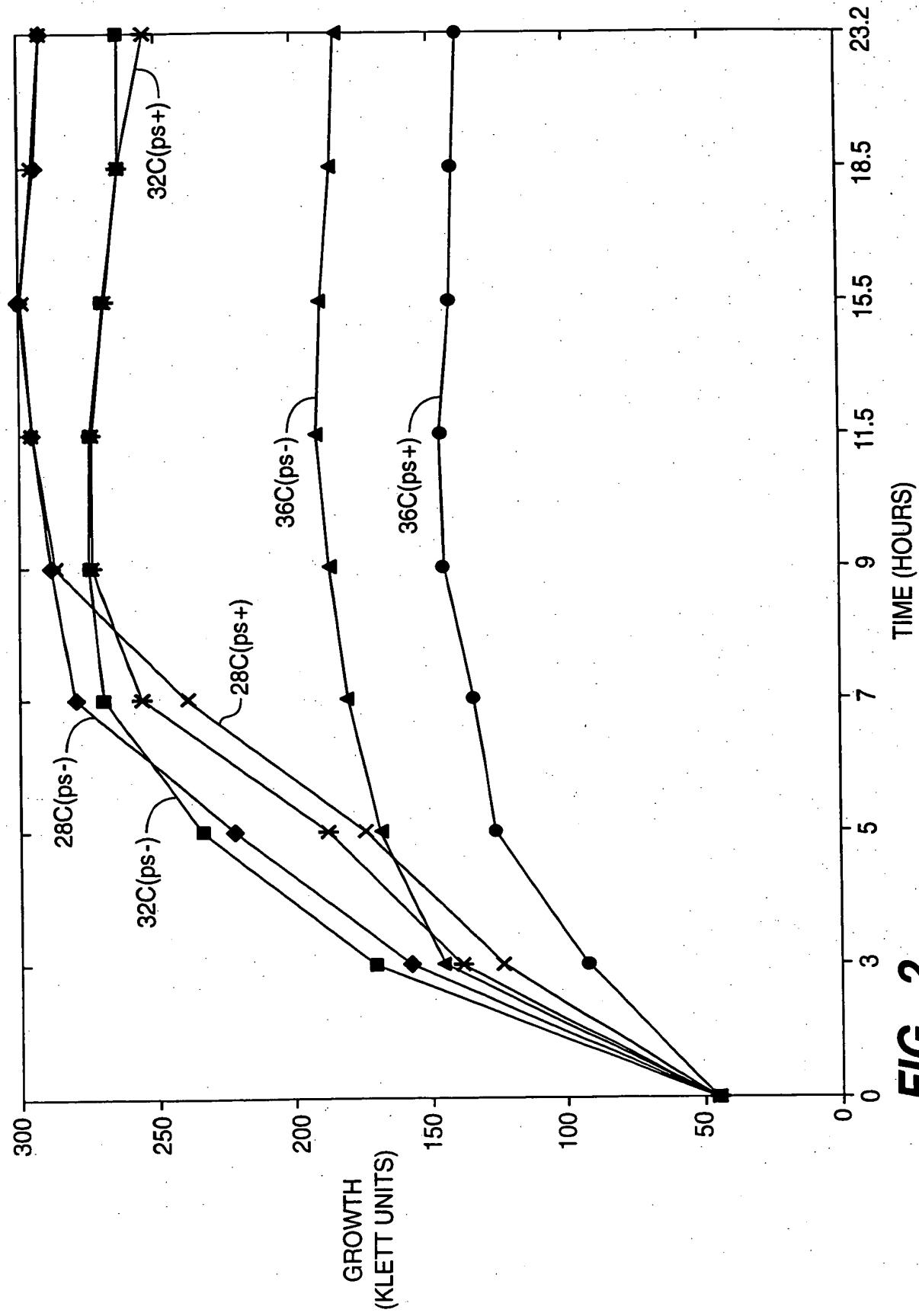


FIG. 2



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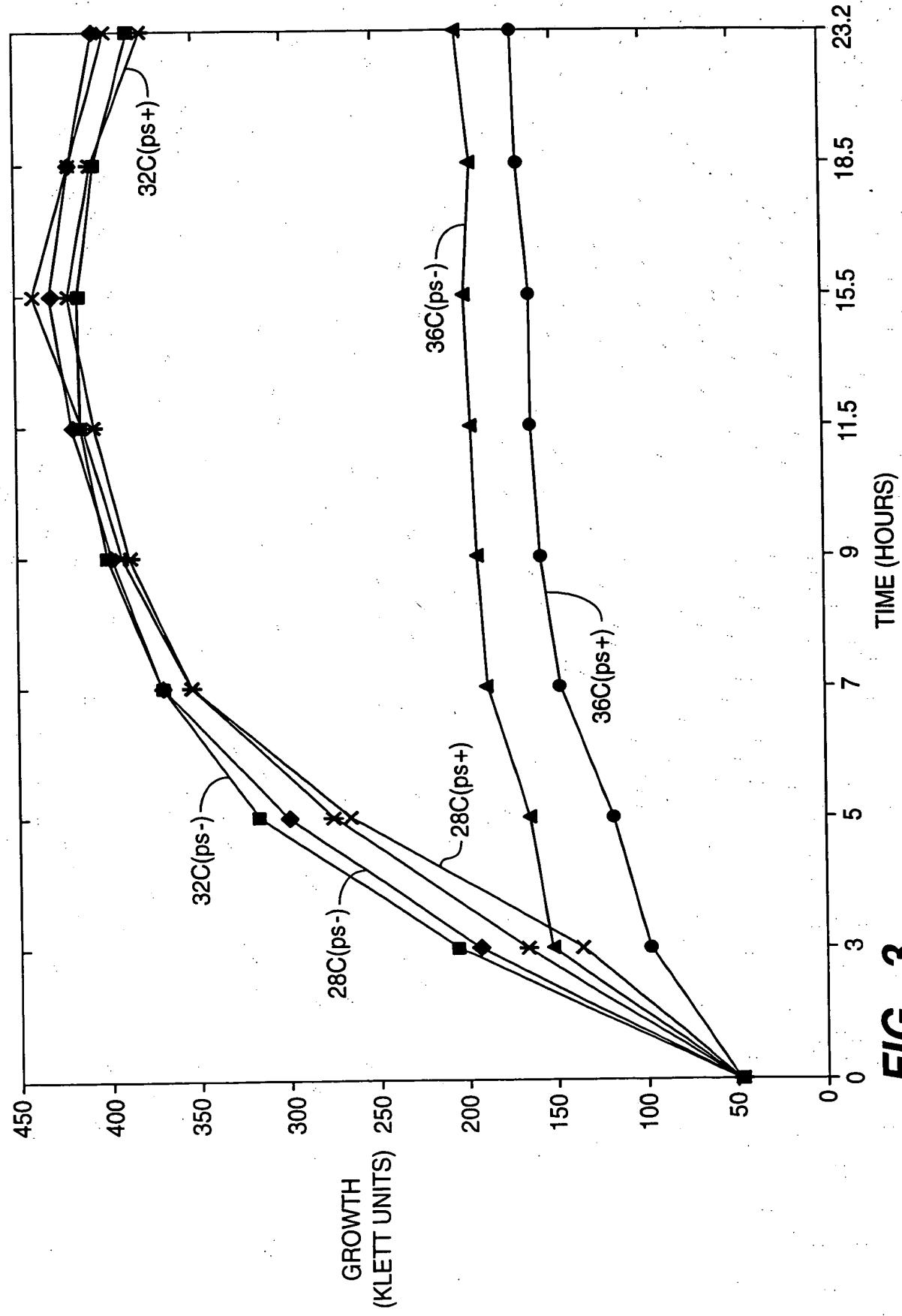


FIG.-3